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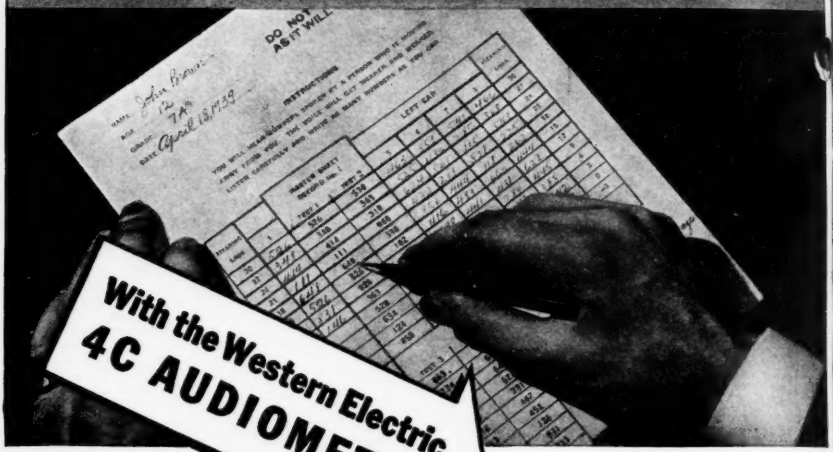

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THE JOURNAL OF SCHOOL HEALTH

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Vol. IX SEPTEMBER, 1939 No. 7

THE PHYSICIAN CONSIDERS PHYSICAL FITNESS TESTS*

CHARLES H. KEENE, A.B., M.D.**

Director of Health and Physical Education, University of Buffalo

It has seemed best to broaden the scope of this paper somewhat, so that a more fitting title would be "The Physician Considers Tests and Measurements in Physical Education".

From youngest infancy, man is curious about his body. What is it? How does it function? What is it good for? How good is it? It is only natural, then, that from the earliest history of man we find evidences that he has tried to find the answer to these questions, to set standards for the human body or its functions, and to measure its efficiency against various types and levels of accomplishment.

Moreover, enormous amounts of study and research have been done in an effort to find accurate tests and measurements for educational status, standards, and efficiency. It was only natural, therefore, that educators have become more and more insistent that those engaged in physical education should devise and use ways and means of studying the standards and progress in that field of educational endeavor. They became more and more insistent on the old Socratic dictum that "if a thing is good, it must be good for something". Bovard and Cozens, authorities in this field, say,[1] "Measurement in physical education has two major purposes: (1) the improvement of instruction, and (2) the improvement of the professional program. Only by the accumulation of accurate information about the pupil can we hope to contribute to his individual needs, help him with his difficulties, or diagnose his strengths and weaknesses. Measurement, therefore, seems absolutely essential to the improvement of teaching, teaching technique,

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* Read before the New York State Association of School Physicians in conjunction with the Annual Conference of Health Officers and Public Health Nurses, Saratoga Springs, New York, June 26, 1939.

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[1]Bovard, John F. and Cozens, Frederick W., "Tests and Measurements in Physical Education", W. B. Saunders Co., Philadelphia, 1938, p. 18.

and conditions of learning." There is an additional purpose which most writers in this field fail to emphasize—the safety of the pupils.

Along what lines have these tests and measurements developed? The earliest type of measurement of which we have definite record is in the field of anthropometry, literally man-measurement. In Egypt, as far back as the 35th century B.C., the ideal body was supposed to be divided into nineteen equal segments, each of which was the length of the high priest's middle finger. This standard, changing each time there was a new high priest, naturally could not survive. Ideals of stature change with various stages of civilization and with the ideals of the races and periods concerned. Although his article appeared twenty-six years ago, Dr. McKenzie in his article on "The Quest For El Dorado" puts it well. He says, "As the arts of civilization became more gentle, the desire for a more slender and elegant type became greater. It was grace rather than strength which began to appear . . . and the form changed from strength to elegance, from power to skill."[2]

Physical measurement in the colleges first appeared in the United States at Amherst College under the guidance of Edward Hitchcock, M.D., in 1861. In 1880, Dudley A. Sargent, M.D., began systematic measurement of college students. This effort gained national publicity first in 1893. At the Chicago World's Fair in that year plastic figures of both a man and a woman were exhibited as representing the ideal forms of the college man and of the college woman of that period. The fallacy here lies in accepting the median as the ideal. The taking of these measurements almost entirely disappeared shortly after that time, except among anthropologists.

For some time previous to this, we had been developing a new type of tests. Starting about 1880, there grew up a very dangerous fallacy, namely, that strength meant health. This had arisen partly because of the fact that Dudley A. Sargent, M.D. had devised and publicized what for many years was known as the Sargent strength test. His idea was not to glorify strength, but as he says, "to test the efficiency of men in handling their weight by their arms as preliminary qualifications for proficient work in heavy gymnastics".[3] On individual college students he used the results of his test as a basis for prescription. After examination, the student was given a booklet in which were checked certain exercises which he was to practice in an effort to build up his weaker parts. In other words, this was an effort towards diagnosis as a basis for prescribing exercise. Newspaper publicity (over-

[2]McKenzie, R. Tait, M.D., "The Quest For El Dorado", American Physical Education Review, May, 1913, p. 295.

[3]Sargent, Dudley A., "Twenty Years Progress in Efficiency Tests", American Physical Education Review, October 1913, p. 452.

emphasis), plus the changing attitude and better information among directors of physical education in colleges, caused the strength test to be discredited and dropped. By 1915 it had almost wholly disappeared. There had gone along with this publicity the theory that strength exercises could make up a proper physical education program, and numerous young men practiced almost daily in strength exercises, weight lifting, and so forth. It is interesting to know that a very large proportion of these died of diseases of the circulatory system, and this was also true of an extremely high percentage of the old leaders in physical education, who for many years had participated in these strength exercises and in heavy gymnastics.

The third type of test which came over the horizon was the cardiac functional test. It began to dawn upon those working in the field of physiology and that of physical education that what we really needed to know was the way in which the body and its organs responded to work. Great interest in this type of test began to be shown about 1900. One of the most interesting of these earlier tests was that devised by Ward Crampton, M.D., at that time Director of Physical Education, Public Schools, New York City, who made a large number of tests on high school pupils. The most important conclusion arrived at was that, depending on the physical condition of the person tested, the change of the body from the horizontal to the erect position increased the heart rate. We have learned that this increase in heart rate is a fairly good index of condition. With the change in position, the rate in a person who is not well trained muscularly, or who is suffering from that chronic fatigue which we call staleness, increases in its number of beats per minute roughly in proportion to the degree of his lack of good condition, or with the degree of his fatigue. Modifications of this test are now used in testing the adaptability of the human machine to the stresses and variations which aviators must undergo.

Next there arose an interest in what were termed physical ability tests. The strength test was of little value as a test of endurance, or of the heart, or of lung development. Of the strength test Bovard and Cozens say, "Further, the idea got abroad that a man became muscle bound by strength test practices, that these practices developed the 'draft-horse' type of man, the strong-man type with short limbs, large chest, broad back and shoulders, and great girth measurements of all parts. The athletes particularly felt that it ruined them for intercollegiate competition of any sort and refused to have anything to do with it."[4] There grew up what

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[4]Bovard, John F. and Cozens, Frederick W., "Tests and Measurements in Physical Education", W. B. Saunders Co., Philadelphia, 1938, p. 18.

we may speak of as direct tests. In other words, if we wish to find out a person's ability in athletics, the best procedure is to have him perform in athletics and measure the results he attains. So gradually there were established age standards for accomplishment in running, jumping, climbing, weight throwing, and other activities. Elementary schools, high schools, colleges and universities, and states developed standards for testing physical ability.

Those engaged in the field became conscious of the fact that too much time was involved here. This led to the next step in tests and measurements, an effort to find an index for measuring physical efficiency. This varied all the way from very simple measurements up to indices with the use of logarithms and statistical tables. This was a *reductio ad absurdum.*

During the last decade there has come a very rapid development and a great variety of sorts of tests covering such types as cardiovascular tests, the measurement of body mechanics (posture), the classification of pupils, the measurement of general qualities, achievement scales, sports technique tests, physical education knowledge and information tests, behavior rating scales, health education tests, and so on.

What are the things we might measure or would like to measure? If we look a moment at the physiology of exercise, discover the types of exercise, and consider the values of measuring each of these, we begin to get a concept of the things to be measured. These types are exercises of: speed, strength, endurance, skill, and attention or alertness. Why should we decide to base a program on the results obtained in testing only one of these, and that probably the least interesting of the five—namely, strength. From the health point of view, body mechanics is much more fundamental. This in itself is a measure of health, reflecting as it does vigor of vital organs, energy, muscular tone and power, mental attitudes such as self-respect, and habits. Strength tests have about as little relation to the health phase of physical education as does athlete's foot to lobar pneumonia.

In the state of New York, the physical test about which we hear most is the so-called Physical Fitness Index, the P.F.I. This is a strength test, and a direct copy, so far as content is concerned, from the old Sargent strength test, which was described by Dudley A. Sargent, M.D., in the American Physical Education Review of December, 1897. Originated and developed by Dr. Sargent, it had been in use in the colleges for a number of years before that time, and was abandoned, because of lack of value, by practically all of them by 1915. Ten years later it reappears as the Physical Fitness Index as shown by the following direct comparison.

Sargent	P. F. I. (Rogers)
Kilograms lifted with back bent	Pounds lifted using back
Kilograms lifted with legs	Pounds lifted using legs
Number of kilograms gripped right plus left	Pounds pressure right grip
	Pounds pressure left grip
Dips plus pull ups, times 1/10 of weight	Pull ups plus push ups, times 1/10 weight, plus height minus 60
1/20 lung capacity in centileters	Lung capacity in cubic inches

Note: 1 centileter equals .6102 cubic inches.

McCloy[5] has this to say: "Lung capacity should be eliminated (from the strength tests), as lung capacity is not a test of strength." "For girls, chinning and dipping tests have not as yet shown a sufficiently high correlation with actual strength to justify their use as valid tests of strength." "In the use of strength tests, there has been a tendency to consider them a panacea for all physical education ills."

Let us look at what Frederick Rand Rogers, the one who put out this P. F. I. group of tests, and who has been the chief protagonist for them, claims for them. In his text, "Tests and Measurement Programs in the Redirection of Physical Education"[6] he attempts to prove in Chapter XI "The Validity of Muscular Strength as a Measure of Physical Fitness". I quote him, "A logical deduction will serve to indicate the significance of strength as a measure of general physical fitness.

1st. Since large-muscle activities improve general physical fitness, and

2nd. Since large-muscle activity produces increase in the strength of the active muscles; therefore

3rd. A measure of increase in strength is a measure of improvement in general physical fitness, and

4th. A measure of the strength status of muscle fibres is also a measure of the fitness status of the organs of respiration, circulation, digestion, and elimination."[6]

Of these four statements, the 1st, "Since large-muscle activities improve general physical fitness", is a flat assumption that physicians would not admit to be always or wholly true. The 2nd we may, within reasonable limits, accept. The 3rd, "A measure of strength is a measure of improvement in general physical fitness", is a non-sequitur,—and is not true, as any experienced physician realizes. Muscular strength by means of proper exercise may

[5]McCloy, Charles H., "Tests and Measurements in Health and Physical Education." F. S. Crofts & Co., New York, 1939, pp. 21, 23, 24.

[6]Rogers, Frederick Rand, "Tests and Measurement Programs In The Redirection of Physical Education", Bureau of Publications, Teachers College, Columbia University, New York, 1927, p. 95.

steadily increase, while general physical fitness just as steadily goes down hill. All of us know of cases of serious organic disease in individuals who show splendid muscular development. Star athletes continue to star while breaking down with tuberculosis. The 4th, "A measure of the strength status of muscle fibres is also a measure of the fitness status of the organs of respiration, circulation, digestion, and elimination" also is not true. The validity of this statement has recently been investigated at the University of Wisconsin, by Glassow and Broer. They state: "If Rogers' claims are valid, physical capacity tests will be invaluable to the physical education profession. They must not be accepted without further evidence of validity, especially as applied to women. A study of this type was made at the University of Wisconsin."

"The physicians in the student health service cooperated by listing the women students who could be classified as representing the lowest degree of general physical fitness. These students were those whom the physicians knew because they reported frequently to the student clinic." (In other words, they were sick.)

"Since the physicians in the clinic would not know the students who possessed abundant vitality, (those not sick) members of the physical education department were asked to list the students who impressed them as being outstanding in physical vigor and fitness." These students, 23 in the fit group and 14 in the low in vitality group, took the Rogers Physical Capacity Tests. Figures show the good group to be younger, heavier, and taller.

When the test scores are compared to Rogers' norms and the scores of the physical fitness calculated, the mean score of the good group is 72.2 and that of the poor is 85.4. By this measure the group selected by the clinic (young women not in good physical condition as evidenced by the frequent visits to the University clinic) possesses greater general fitness than does the good group."

"Even though the number of cases is small, there is here conclusive evidence that Rogers' norms cannot be applied to college women to measure physical fitness."[7]

The present day program in physical education in schools is made up largely of plays, games, and sports. As a measure of such a program the P. F. I. (a strength test) is not an adequate nor an accurate index by means of which—since it does not measure skills, playing ability, or safety of participation—classification and progression of pupils or adequacy of program may be measured.

Experts in tests and measurements in education, in public health, and other statisticians judge the value of tests according to certain set standards. In the educational field, one of the out-

[7]Glassow, Ruth B. and Broer, Marion R., "Measuring Achievement in Physical Education", W. B. Saunders Co., Philadelphia, 1938, pp. 275-277.

standing texts is by Carter V. Good. In his "How To Do Research In Education"[8] he presents five standards to be met by scientific investigations. These in turn were derived from Thorndike's "Principles of Teaching".[9] These are "(1) mathematical precision and accuracy, (2) objectivity, (3) verifiability (or validity), (4) impartiality, and (5) expertness". When we try to measure physical activities, our tests must meet a sixth limitation (6) safety.

Those who are appealed to by mnemonic schemes may write these six as M-O-V-I-E-S.

Rogers also says (page 95), "Do large-muscle activities improve general fitness? To propose the question would be absurd if the conclusion were not under examination. If large-muscle activity does not improve general physical fitness physical education loses its chief justification." If this last sentence is true, then the name is wrong. It should not be called "education" at all, but "training". Then its place in an *educational* program is hardly justifiable.

To what extent does the P. F. I. meet these standards of research?

(1) "Mathematical accuracy." The scale on which classification is based seems somewhat empirical to say the least: (2) "Objectivity" is fairly good, although the skill and experience of the person supervising the test is a factor: (3) "Validity" has been discussed: (4) "Impartiality;" this is a scheme set up to prove a theorem based on false assumptions: (5) "Expertness" is not always present in young teachers.

To the physician, probably the most important standard to be met is the sixth—Safety. In forming an opinion here, it aids us if we remember that these tests are supposed to be used mostly at the high school age level—roughly at 13-18, an age characterized by physical immaturity of joints, ligaments, muscles, and vital organs. What of sacro-iliac and other lower back strains, of tear of abdominal muscle fibres, of cardiac stress—and certainly these tests should be given only after thorough physical examination by a physician has shown that no noticeable hernia nor heart abnormality is present. Is this an age at which pupils should be encouraged, as one State Director put it, "to pull the floor off the gymnasium"?

On this point may I quote from a letter written to Dr. Charles Lewis of Providence, R. I., by Joel E. Goldthwait, M.D., one of our leading authorities in orthopedics:

"Regarding your first question as to whether strength tests in any way measure health, I should say to that distinctly, "No".

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[8]Good, Carter, V., Ph.D., "How To Do Research In Education", Warwick and York, Inc., Baltimore, 1929, p. 84.

[9]Thorndike, E. L., "Principles of Teaching", A. G. Seiler, New York, 1906.

Many of the strongest individuals with the different tests use the body in such a way that from the point of view of their ultimate well-being and general health, they fall down badly."

"As to your second question, regarding the back and leg lifts, with the dynamometer, I should eliminate these entirely in handling any one, but particularly the boys and girls. With each of these the support or the drag comes chiefly upon the pelvis or the lumbosacral joint and with neither of these at that time of life is the strength such as (that) it is fair to put unusual loads upon them. With the older persons, I would not use these tests because they do not seem to me to indicate anything that is of real value from the point of view of the individual's well-being."

Floyd R. Eastwood of Purdue University has this to say, "Regarding the safety factor in Rogers physical efficiency index, I believe that there is no harm if the individual has: (1) received an adequate medical examination; (2) and has been conditioned to withstand such strength measures as are required in Rogers tests. Needless to say, the tester must use discretion in the general conditioning preparation necessary *before* any test demanding endurance, strength, or speed is given."[10]

And Ruth Glassow of the University of Wisconsin, declares, "He who uses tests because others are doing so is a slave to fashion"! The measurement program has changed in the past two or three decades, and the physical education teacher must recognize this fact together with the changing philosophy of the types of activities presented. Skill has replaced structure; "to do" is emphasized rather than "to be".[11]

That Report of the Regents' Inquiry covering "The School Heath Program" sidesteps any real discussion of the Physical Fitness Index. It says: "This method has its advocates and its critics."[12] Later, however, the Report does say: "A sound method of evaluating progress seems essential if either pupils or teachers are to take physical education seriously".[13] Still later, the Report says: "Physical activities will increase muscular strength, but there is no known relationship between muscular strength and disease prevention".[14]

The best summarization for this paper seems to be to quote extracts from a letter and its answer which appeared in The

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[10]Personal letter from Eastwood, Floyd R., Ph.D., Associate Professor of Physical Education, in charge Teacher Training and Health Hygiene, Purdue University, LaFayette, Indiana. Formerly Asst. Professor of Education, New York University.

[11]Glassow, Ruth, From paper presented before the Mid-West Convention of the American Association for Health, Physical Education, and Recreation.

[12]Winslow, C. E. A., "The School Health Program", The Regents' Inquiry, McGraw-Hill Book Company, Inc., New York, 1938, p. 68.

[13]ibid. p. 68.

[14]ibid. p. 74.

Journal of the American Medical Association recently.[15] A New York physician wrote to the editor of the Journal a letter too long to be quoted in full, but among other questions he asks the following: "What is considered the validity of the physical fitness index tests?" This letter quotes Frederick Rand Rogers as follows: "And what is health? . . . This is abundantly muscular power and coordination, which are measured most objectively, reliably, economically and interestingly to subjects by the simplest forms of strength tests." Then the inquiring M.D. asks, "Is this a view which physical educators will accept and put into practice?" In this letter, too, The Bulletin of the Indiana State Board of Health for October, 1938 is quoted as follows: "Frederick Rand Rogers, director of physical education at Boston University, has written us as follows: 'This is to report that a Boston manufacturing concern, (name given) is now experimenting with new designs for physical fitness testing instruments far superior to those now on the market, which they claim they can sell at greatly reduced prices.'" To the writer of this paper, this seems like barefaced advertising at the expense of the welfare of our school children.

May I quote extracts from the answer appearing in the same Journal?[15] The question "was referred to workers in the field qualified to express opinions on the subject. The answer is based on their combined views." From these views I quote; "The human body is too complicated to attempt a diagnosis of physical condition by muscular strength alone; furthermore, it is quite generally conceded by students of the subject of physical fitness that performance tests are not as useful and as discriminating in the estimation of physical condition as the nonperformance tests. All strength tests are performance tests."

"In fact, so widely has this test (the P. F. I.) spread in elementary and in secondary schools that it is being used: (1) as the basis for the physical education activities program prescribed individually for every pupil, (2) as a guide to the evaluation of teaching procedures, (3) as a yardstick against which to consider academic load (the physical fitness index purports to determine not only a child's capacity for physical activity but "to a significant degree also his capacity for mental endurance"), (4) as a criterion by which the nutritional status and health habits may be judged, and (5) apparently as a check on the adequacy of the medical examination."

"No physiologist would be willing to say that physical fitness can be judged primarily on the basis of strength, when strength is measured by a battery of tests involving single, maximal efforts. Dynamometer tests are notoriously subject to profound variations from psychic causes alone." "No valid test of physical fitness can

[15]The Journal of the American Medical Association, May 6, 1939, p. 1852.

disregard the inclusion of a direct or indirect estimate of the response of the cardiovascular respiratory system to measured work." "A battery of tests composed of single maximal pulls on a dynamometer certainly does not indicate a child's 'capacity for sustained physical activity or endurance'."

"It may be safely concluded that current scientific opinion cannot grant that physical fitness can be deduced from one set of measurements alone or that muscular strength is either an accurate or a valuable index of physical fitness." "Of all measurements, those of muscle might be considered the poorest. Emotional states determine their energy output in a large measure, and this is a serious objection."

To the claim that the P. F. I. is a scientific instrumentation for measuring health, the mysterious warning appearing on the wall at Belshazzar's feast seems the adequate answer. "Mene, Mene, Tekel Upharsin." Briefly translated—"Thou art weighed in the balances and thou art found wanting."[16]

* * * * *

A New Peak for Smallpox,—New Jersey, with a population of about 4,400,000, has not had a single case of smallpox in a period of more than seven years—since 1931. On the other hand, the States of North and South Dakota, Montana, Idaho, Oregon, Wyoming, and Utah, whose combined population is less than that of New Jersey, reported during the same period 12,666 cases of this loathsome disease. Why?

Chiefly because in New Jersey the people readily accept the principle of vaccination as a preventive of smallpox, while in the other seven states compulsory vaccination is generally opposed by the population, and little help is given the health authorities in their efforts to stamp out the disease. Strange as it may seem, three of these Western States actually prohibit compulsory vaccination by statutory regulation, regardless of prevailing circumstances.

As usual, the States chiefly responsible for the high smallpox prevalence last year were those lying north of the Ohio and west of the Mississippi Rivers. These States, whose total population is only slightly more than half of the entire population of the United States reported 14,166 cases of smallpox in 1938 as against only 945 cases for the rest of the country. Statistical Bulletin, Metropolitan Life Insurance Company, May, 1939, p. 2.

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[16]Book of David V, 27.

FUNCTIONING RURAL SCHOOL HEALTH PROGRAMS*

VIVIAN V. DRENCKHAHN

Lecturer in Health Education, University of Michigan

The problems which arise in the process of growing up and in children's daily activities present fundamental needs on which to base a health program. An environment that is favorable to the children's development, and the knowledge of how to use and adjust it in the promotion of good health are other essentials in health education.

In organizing any program it is necessary to recognize the need (1) for active administrative support (2) the importance of making a study of individual, environmental and community health problems (3) the value of working with parents, and (4) the wisdom of utilizing existing local resources and facilities in developing a program for the community.

Administrative Support,—Progress in health education can be best made when the work has the interest, understanding and active support of the administrator. Problems in school organization, in the use of the school facilities or in school policies, may need changing in order to make healthful school living a reality. Moreover, the enthusiasm of the administrator seems to permeate to the entire school personnel from teacher to custodian, and this in turn is reflected in attitudes of acceptance and cooperation on the part of the school and the community. In my experience, it has been interesting to note the difference in progress in developing health education programs in similar communities, one in which there was active administrative support and the other in which there was indifferent or passive support. In the former case, meetings with teachers were arranged as well as attended by the principal or superintendent. Teachers were encouraged in developing a program of healthful living and learning through real experiences. Opportunities for interpreting the program to parents and community groups were utilized, or sometimes devised. In the end the levels of achievement in communities with such different support could not measure the same.

The Child and His Health Needs,—Today our knowledge that activity is natural, and that in some form it is essential to learning, is utilized in our activity programs in which children "learn by doing." Observations of child behavior during work and play should give important information regarding the way the child is developing physically, mentally, emotionally and socially. A study of these records may indicate needs, which should be given con-

* Given at the New England Health Education Institute, Cambridge, Mass., April 22, 1939.

sideration in a plan for health teaching. A study of the 24-hour day is another way of learning more about the child, and gives the teacher an appreciation of his existing health practices.

In some communities, teachers visit the homes of all the pupils in their rooms to establish a good relationship with the parents and better to understand their child. Report cards are not issued in some schools, but teachers and parents arrange a conference period to discuss progress and development. They join forces to plan for a daily program that will meet child needs.

His health status with respect to the nature of physical defects and their correction, communicable diseases, protection through immunization and vaccination, whether he is under regular medical and dental supervision, and the causes for absence from school, should be significant information for every teacher. The questions that he asks, his special interests, as well as his outstanding needs for assistance have been found helpful in planning for activities which develop well-rounded personalities.

When both teachers and pupils together make a study of environmental conditions and community problems, greater interest and responsibility in existing health needs are stimulated. It is often the first step in developing a unit of work on some problem in which the group became aware and interested. Many such appraisals, or survey forms have been developed, and are available today. When teachers help in formulating a check-list as they did in Erie County, New York, an added educational opportunity is provided, and even more interest in making the study is created.

Adult Education,—Adult education and parent education assume a unique and essential role in a health education program. Today, workers in the field of education and health realize that many problems can best be solved through work with parents and community groups. The formation of child study groups, mothers clubs, teachers clubs, parent-teacher organizations, parent education institutes, community clubs, and the arrangement for special or short courses are evidences of this important trend. Through these groups, health education workers have an opportunity to discuss phases of health education, child development, general education, and other topics that affect the total personality of the child. More and more in our democracy are we feeling the need for continuing education so that all individuals and groups will be sensitive to problems and work together in solving them. Likewise many school and community health problems can best be solved through the cooperative action of many groups and individuals. When they, in turn, have a better understanding of the numerous factors that contribute favorably to the health of children and to their best development, health education is more easily promoted and problems are more easily solved.

The Teacher's Part,—In developing a well rounded school health program, teachers who understand children and who are appreciative of the factors that make for their best development are essential. It is generally recognized today that health teaching is the responsibility of the classroom teacher. In the many departmentalized high schools, there may be modifications of this plan and a special health coordinator used. It is the classroom teacher, however, who has the opportunity to guide children in experiences of healthful living throughout the school day. She, too, largely determines the quality of the teaching program. Her awareness of the learning possibilities inherent in an activity will often determine the content of the curriculum. The teacher can do much to make the school an attractive pleasant place in which children look forward to spending a day of work and play.

Often teachers-in-service have not had the essential basic training in child development, in health education, or in mental hygiene. Many communities have recognized this need and carry on a program for teachers-in-service. In developing a program in Erie County, New York, regular meetings were held with teachers in an effort to meet this need. In the areas served by the Children's Fund of Michigan[1] extension courses for teachers-in-service are offered through universities and state teachers colleges. An extensive course for teachers-in-service in the Province of Ontario is offered during the summer by the Department of Education. Credit is not given until the "subsequent year of teaching gives satisfactory evidence of the practical application of the course in the classroom."[2] The W. K. Kellogg Foundation supplements the extension courses and other educational year-round activities for teachers-in-service in the seven counties participating in the Michigan Community Health Project during the school year with scholarships for summer courses.[3]

The rural teachers clubs springing up in many parts of our country are also a means for professional improvement. It provides the opportunity for exchanging ideas and studying educational problems common to the group.

The School Day,—Using such factors in the school environment as the lighting, heating, ventilating, seating, handwashing, and drinking facilities are in themselves rich opportunities for both health teaching and healthful living. If problems exist in connection with their correct use, if the facilities are such that

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[1]Evans, Alice. Brief Summary of Health Education Opportunities for In-Service Teachers. Rural School Health Education Activities. Assembled by Drenckhahn and Grout. 1938.

[2]Roberts, Robert H. Education in Health for Teachers-In-Service Journal of Health and Physical Education, Vol. X, No. 3, March, 1939.

[3]Otto, Henry J. Educational Activities of the W. K. Kellogg Foundation. Elementary School Journal, Vol. XXXVI, No. 8, April, 1936.

changes are indicated or if they are in accord with desirable standards, vital health experiences can be developed around them. In rural schools, environmental factors are often real obstacles to healthful living but much can be done with a definite objective in mind and a cooperative group in the community. Sanitary toilets, a safe and properly constructed well, screens for windows and doors, and similar health needs may likewise be difficult to secure unless the education program also reaches the parents and the community, and efforts are coordinated with those of the health department.

The way the school day is organized largely determines if a child lives healthfully. An informal activity program in itself helps the child to develop responsibility, initiative, and greater self-direction. Greater freedom also means an awareness of and respect for the needs of others. A school day that is neither too long or so strenuous as to cause fatigue, one in which quiet and vigorous activities are alternated, in which play periods out-of-doors are provided, and in which rest periods are arranged for all who may need more rest, needs the careful planning and cooperation of all to carry out. The noon hour is particularly significant from both the educational and health viewpoint, and can be made a rich experience in the children's day. Washing hands before eating, serving a nutritious hot lunch to supplement the cold packed lunch, eating together as a group, and relaxing after lunch are among the health practices developed around the noon hour.

Health Protection,—The teacher through her teaching program can help in making the health examination an educational experience for the child. Through work with individual children and during visits with parents, she can also help parents and children to see the need for securing the correction of physical defects. When the parent is present at the examination, of elementary grade children particularly, the physician is able to discuss the child's health status directly with the parent. Both the parent and teacher can do much in building up attitudes of appreciation and understanding of the physician's and dentist's services in promoting health and in preventing disease. The school also has a responsibility in the immunization and vaccination program. Teaching units built around these protective measures are a vital part of health education.

The daily health review is another means through which the teacher assists in the prevention and control of communicable diseases. If a child feels ill or shows any symptom of illness he should be isolated from others, and taken home as soon as possible. However, often by the time a child who is ill arrives in school, many are exposed. The teacher, physician, health department, and parents can do much to prevent such a situation by discussing

together the reasons for keeping a child at home who does not feel well or who shows symtoms of illness. The care and control of the common cold, and other communicable diseases are typical problems around which teaching activities can be centered. The work of the physician, health officer, sanitarian, public health nurse, and laboratory technician in the control of diseases in a particular community is apreciated in relation to our realization of these services. In many communities the teacher makes routine tests of vision with a Snellen E chart and of hearing with a 4 A audiometer during the first months of school. She has been instructed, usually by a public health nurse or physician, in the use of these screening aids. Any indication of eye strain or difficulty in hearing are also recorded. Suspicious cases are referred to the family physician for examination. Training in mental hygiene should give the teacher help in knowing which children require the psychological and psychiatric services offered in a community.

Health Teaching,—Health taught through activity programs in which the children have a part in the planning, developing, and evaluating is in line with modern school practices. When the children themselves take some part in studying the health conditions in their school and their community, or which arise in their daily activities as individuals or as members of a group, they become more concerned and assume greater responsibility for improving health practices. Much health teaching can be done through large teaching units which are developed around natural child interests and draw from all subject matter fields. In some activities health may be the predominant interest, as in units on "The Use of Grains" or "Care of the Eyes."[4] Opportunities for integrating health with the social studies occur in many units, as in a study of Home Life, Our Community, and others. Science and health, too, have much in common, and there is a trend to integrate further in these two fields.

Real situations existing in the school, home, or community are used as the basis for much health teaching. Children go out of the school to visit dairies, pasteurization plants, bakeries, water supplies, truck farms, garbage disposal plants, fruit farms, museums, a school hot lunch project, and numerous other points of interest.

Visual aids, too, are becoming increasingly important in any educational program. Photographs of activities, models, charts, demonstrations, slides, motion pictures and exhibits are among the visual aids that can be utilized in health teaching. Suitable articles which were made in connection with the study of various

[4]Health Teaching Activities in Rural School, Buffalo Tuberculosis Assoc., 708 Ellicott Street, Buffalo, New York, 1938.

health problems were assembled together as a "children's health museum"[5] by a group of teachers in Erie County. Dioramas depicting the work of Pasteur, the story of tuberculosis control, the history of lighting including present standards of good school and home lighting, models of a well planned playground with desirable equipment, a miniature school showing the changes needed for healthful living, and a model of the village water supply system are only a few of the articles contributed to the "museum".

In rural schools, several groups or all pupils contribute, according to their own ability, to an activity unit. This arrangement enables the teacher to plan for a more enriched program, as well as to do more individual work with children. As children grow older, they are ready for more information regarding the reasons underlying their health behavior. In order that the program be vital and closely related to the realities of healthful living, the teacher must have breadth of vision in making a plan to meet the needs of children. Sometimes the teaching centered around a health need is done vaguely and briefly, with the results that it does not become functional in the child's living. Thoughtful planning and careful development are the forerunners of vital teaching.

The use of many references in health and science is essential in the activity programs functioning in our schools today. Schools are making progress in building up libraries to meet this need. Books are also available from many different sources, such as the county, village, and township libraries, or the state libraries in connection with the Education Department.

There are many splendid booklets and bulletins in the field of school health from the United States Office of Education and from other authentic sources, which are free or inexpensive and readily available to the teacher. If the school is not supplied with a file, the children and teacher could easily make one for their collection. Materials on various phases of work may be placed in large envelopes like the teaching kits on tuberculosis and school health developed by the National Tuberculosis Association.

Helping the Teacher,—The rural teachers' club and modern transportation have helped in removing the isolation of the rural teacher. Still she works alone most of the time, and probably for this reason she is particularly appreciative for any help and assistance she may receive professionally. The rural teachers' clubs, teacher meetings, extension courses for teachers-in-service, and "teacher visiting day," are also utilized in developing a program in health education. Through visits with the teacher in school and by having the teacher help in developing materials, teacher growth may be stimulated.

[5]Williamson, Pauline B. Visual Education for Schools. American Journal of Public Health, March, 1938.

Summary,—Workers in the field of health education are challenged to develop a program that functions in the daily living of children. Greater progress is made when the administrator actively supports the program. When children are given a part in finding of health problems, and in planning the activities, then experiences become more purposeful and meaningful. Moreover, when parents, community groups, health departments, and the school work together, a more effective program of child health can be developed in the school.

* * * * *

Smallpox,—During the last twenty-one years 48,613 cases of smallpox were reported in Illinois. Each of the patients was required to spend at least three weeks in quarantine and doubtless at least one other person was confined as a nurse or attendant with each patient. Assuming that an average of two persons were quarantined as a result of each case, the aggregate time lost from usual activities on the part of these people was 5,609 years.

In a great many instances schools were closed on account of outbreaks of smallpox during the 21 years. How much time was lost in the aggregate can only be surmised. In one instance, an unvaccinated teacher was the source of an outbreak which resulted in the closing of school for about a month.

There were 166 deaths from smallpox in Illinois during the 21 years. Funeral costs alone, estimated at $150 each, amounted to $24,900.

Each of the 48,613 smallpox patients doubtless had the service of a doctor. If there was an average of two visits per patient by physicians at an average cost of $2 per visit, the total cost was $194,452.00, a tidy sum.

Reflection on this experience might very well stimulate the thought of local officials, especially members of school boards and health officers, on the value of vaccination. It is relatively easy to obtain almost 100 per cent. vaccination among pupils at the opening of school. It is even easier to promote vaccination among teachers.

The States of Massachusetts, Maine, New Jersey, Pennsylvania and Rhode Island had no case of smallpox reported during the six years ended with 1938, and in some of them freedom from the disease extends over a longer period. These records are attained through systematic vaccination. Illinois Health Messenger, July 1, 1939, p. 98.

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Editorial Board Member,—Morley Sellery, M.D., has been appointed a member of the Editorial Board of the Journal of School Health.

ORAL HYGIENE PROGRAM IN THE SCHOOLS*

C. D. VAN ALSTINE, D.D.S.

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Dr. Eugene H. Porter, State Commissioner of Health, on December 7, 1910 appointed two dentists to lecture on oral hygiene in the schools. This so far as I know initiated the dental health program in the state of New York. The response from school authorities and others was so pronounced that provision was made for the employment of dentists and dental hygienists under the Medical Inspection Law, enacted August 1913, by the schools of the State. The State Education Department was charged with its administration.

Though the Medical Inspection Law was enacted in 1913, a systematic plan was not outlined until February, 1915.

Liberal support was given by the State Dental Society, and more than 300 dentists gave one hour of free service to school children under a "Children's Dental Hour" program. This service was for such children as could *not* otherwise receive dental attention. Under Educational Administration, the program steadily moved forward. It soon required the full time service of a State Oral Hygiene Supervisor, who was appointed on September 1, 1918.

It soon became apparent that providing free or clinical service in the schools was not the solution of the problem. Today only a small number of dentists are employed in the schools, and they in larger industrial centers. The dental hygiene teacher has been found more effective through placing the program on an educational basis rather than clinical. In 1925 a dental hygienist was added to the staff in the Department of Health, and is still serving in the Division of Maternity, Infancy, and Child Hygiene.

Health Education Through Health Service,—In an adequate health service program, emphasis must be placed on preventive measures and on the health education of the children and parents. These aspects of the program must not be over-shadowed by corrective procedures, essential as they are. The rich opportunity for individual health education of children and parents through examinations, tests, and follow up service must be capitalized.

Participation of the pupil himself in the health service will help him gradually to acquire desirable health information and furnish a powerful means of motivating his every-day behavior. It will also help him, as he matures, to become alert to his own health problems, increasingly self directing in solving them, gradually to assume responsibility for healthful living and for the use

* Presented before the Conference of Health Officers and Public Health Nurses, Saratoga Springs, New York, June 27, 1939.

of qualified medical and dental service, and to develop habits which will secure and maintain a healthy mouth with a full set of teeth in normal occlusion, so that the child may maintain proper insalivation and mastication of his food.

Notification of defects found in the school health examination should be made in writing and delivered by mail or direct by school personnel to the parent or guardian. This procedure should prevent any misunderstanding on the part of the family, the dentist or any agency called upon to determine what, if any, special education and treatment is necessary for the conditions reported to the parents. A copy of the notification should be kept on file in the school.

Treatment,—The nature and extent of the school's responsibility for treatment is as follows:

1. The school should call the attention of parents to apparently abnormal dental conditions in their children and urge them to obtain suitable advice and treatment.

2. The situation in regard to providing treatment is as follows:

(a) The Welfare Law passed in 1929, 16 years after the Medical Inspection Law, places upon the Welfare Commissioner the responsibility for providing medical or dental care for those families in so low an income group that they cannot provide medical care but are otherwise self-supporting.

(b) The Judge of the Children's Court or a Judge with similar jurisdiction can order treatment when the parents are *unable* or *unwilling* to provide treatment. He can determine who shall pay for such treatment.

(c) When a board of education makes an appropriation for such treatment, it must be provided, on demand, for *all* school children irrespective of the financial status of the parents or guardians.

3. The school should establish a working relationship with the local welfare agencies, local medical and dental societies, other health agencies, and the Judge with the proper jurisdiction, to see that pupils with debilitating conditions which interfere with their education receive adequate treatment, when such treatment is not otherwise obtained.

For a more detailed outline of objectives refer to the Bulletin, "A Guide to the Dental Hygiene Program in the Schools of New York State", Health Education Series, Bulletin No. 4, Dept. of Ed.

THE DENTAL HEALTH PROGRAM FOR THE CHILD*

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The administration of dental public health is a major problem because dental disease affects nearly our entire population. Health workers have long ago accepted the fact that any health survey will reveal an extremely high incidence of dental disease. It is also generally agreed that it would be impractical to carry out a health program to reduce the prevalence of dental disease among the general adult population, realizing that no reduction in the incidence can be anticipated when each succeeding generation will present the same amount of dental needs.

This problem, like any public health problem, must be attacked from the standpoint of prevention. It is for this reason that dental health programs are primarily directed toward children since preventive procedures can be most effectively applied during the period of development, that is, from the prenatal period to maturity.

The etiology of dental disease, in the light of modern thought, involves a number of complex factors. The research worker considers the problem from a biological and physiological viewpoint. He has presented evidence which involves heredity, prenatal nutrition, balanced diet, salivary reactions, calcium-phosphate metabolism, the glands of internal secretion and bacteriological processes. Since dental disease is complicated by this assorted group of associated factors, then it obviously requires a vast amount of coordinated activities for its control.

Resources available for the administration of dental public health are limited. Our present knowledge provides us with two methods of attack. First, health education which is designed to preserve the individual in a state of good health by teaching him to practice the fundamental rules of healthful living; and second, corrective procedures, which include prophylactic dentistry as well as reparative dentistry.

In spite of the fact that the etiology of dental disease has not been fully determined, our present knowledge convinces us that the following conditions are contributing factors to the prevalence of dental disease in children: (1) a lack of appreciation of the importance of dental health, (2) indifference toward periodic dental attention, (3) economics, (4) faulty nutrition, and (5) poor personal hygiene.

* Read before the Child Hygiene Section of the American Public Health Association meeting in Kansas City, October 25, 1938.

It is reasonable to assume that the basic function of the dental health program should be to alter these destructive environmental factors by impressing children and parents with the importance of a protective diet, periodical dental attention, and mouth cleanliness, and to encourage children to practice these important health habits.

A protective diet has long been advocated by some authorities. Nutritionists tell us that the diet of the average person contains too much carbohydrate and too little of foods containing minerals and vitamins. Of this there can be little doubt. Dental health workers have become conscious of this fact, and are placing considerable emphasis on nutrition in health education. The importance of vitamins A, C, and D cannot be overemphasized as a protective diet against dental disease. We are, however, often confronted with the economic aspects of this problem. Some families cannot buy citrous fruits and fish liver oils. A fact even more discouraging is that in far too many cases milk is not available to children. This is true even in some rural communities. Health workers realize that health education alone will not solve this problem.

Experience has shown that a dental health program for children, to be successful, must be carried out as a routine school activity. The resourceful teacher correlates health lessons with the fundamental processes of education. A variety of devices for teaching dental health are being used. Work-books, puppet shows, motion pictures, playlets, mimic broadcasts, models, posters—all have desirable features to recommend them. It is to be hoped that by the process of trial and error we can eventually standardize our teaching methods so that effective results can be obtained in the hands of the average grade school teacher.

An indifferent parental attitude toward dental health adds another burden to the work of the teacher and health worker. It is necessary to include some extra-school activity in the health program in order to obtain cooperation of the parents. The most effective means, apparently, is to encourage parents to participate in the promotion of the school or community health project. Experience has indicated repeatedly that parents will show an interest in a dental corrective program if they can be induced to participate as members of a civic group, but will be wholly indifferent to the dental needs of their children if individual action is relied on. Administrators of dental health programs have recognized this fact and make an effort to include parental clubs or civic groups as a cooperating agency in the school dental health program.

All dental public health workers agree that a factor of great importance is that dental health activities be directed toward the preschool child and toward the children in the lower grades. It is obvious that most effective work can be done with children of this age, because health habits can be more easily taught, and because these children will present a minimum of serious dental defects.

By following these children for several years, and by continuing the work with the preschool groups and the children entering school each fall, a permanent and systematic program can be developed. Some schools are making an effort to have certain health standards a prerequisite to enrollment which should relieve some of the burden of administering a school health program. A major portion of the dental corrective needs of the children in the lower grades are eliminated if a dental health certificate is presented by each child entering school. This would seem to be a reasonable requirement if provisions are made for the indigent child.

Good dental health habits are too often interpreted to mean regular use of the tooth brush. We should ever be mindful of the fact that periodical dental inspection and the early correction of defects are also health habits which children must be taught to cultivate early in life. The dental profession is unanimous in its opinion that, in order to preserve the oral tissues, it is important to begin dental attention at an early age so that defective teeth and mal-formed jaws can be treated in their incipient stage.

There seems to be a variety of opinion among health workers and dentists as to the best procedure for making dental examinations of large groups of school children. There is little doubt that more thorough examinations can be made in the family dental office, but it is often difficult, especially in rural communities, to make arrangements for children to visit the family dentist. For this reason, it has been a general practice to have dentists make examinations in school rooms which, if repeated year after year, places a heavy burden on a small group of dentists.

Regardless of the method employed, an effort should be made to encourage children to look to their family dentist for their dental needs. School dental clinics are practical from the standpoint of handling large numbers of children, but careful consideration must be given to the fact that the fundamental responsibility lies with the parents.

No dental health program would be complete without making some provisions for the indigent children. Whether or not public opinion will eventually demand that the health needs of the indigent children be provided by tax-paid funds remains to be seen. Some communities are making provision for the indigent children in school clinics or with the assistance of civic clubs or community chest funds. It has been demonstrated repeatedly that the success of an indigent program depends to a great extent on the importance placed on health by the local authorities and civic leaders.

Regardless of how successful dental health programs for children have been in the past, there is every reason to believe that the experience which is being gained will eventually lead us to the most effective method for controlling one of the most widespread public health problems.

A SCHOOL CLEANS UP ITS "GYM"*

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The environment and use of equipment in the physical education department of a city high school presents acute problems of health and efficiency. The plan which was worked out in 1936 by the school health committee in South Bend, Indiana, to meet this situation may be applicable to other schools with similar problems.

One function of the faculty health committee** in each elementary and secondary school is to study the environmental conditions which are not conducive to healthful living and make recommendations for changes. The committee is composed of the principal, classroom teachers, physical education teachers, nurses, the custodian, and a member of the parent-teacher association.

A study of health conditions in one junior-senior high school revealed the fact that the condition of the shower rooms, suits, towels, and other equipment was highly undesirable from the standpoint of good health practice. Some of the conditions found were as follows:

1. Locker-rooms were insanitary and so crowded with lockers that they could not be kept clean, and the typical locker-room odor was ever present.

2. Insanitary suits of all sorts, which could not be laundered easily, were found.

3. Towel service was poor; showers were being taken with soiled towels or none at all.

4. There was considerable loss of equipment due to poor locks and lockers. The replacement cost to parents for this loss was high.

5. There was a loss of efficiency in the department due to absence from class because of lost equipment.

6. Class morale was poor because of a lack of pride in personal appearance.

Our schools have a fee system by which textbooks are rented for $1 or $1.25 a semester. The committee recommended that physical education equipment be placed under this system and a fee charged. This recommendation was brought to the administrative body several times, and finally the group was convinced that the plan was worth trying. It was worked out for the boys.

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* Public Health Nursing, September 1938, p. 548.

** Activities of committees described in "The Nurse in the Modern School," Lulu V. Cline, Public Health Nursing, September 1936.

The cost of 500 suits, 500 socks, and 700 towels, and the wages of the laundress were to be taken from the fee money, which was 70 cents a semester for each student. A washing-machine was purchased by the city schools and charged against the high school, the amount to be reimbursed from fees after a period of time. The installation of washer, drying lines, and other equipment was financed by the board of education.

The results have been gratifying. Our locker-room is mopped daily, and is clean and sanitary at all times. The locker-room odor is gone. The suits are always clean and fresh. A suit or towel is used only once before laundering. Each boy takes a shower after class, using his own clean towel. Class morale is better. Pride in personal appearance carries over into street clothing.

The fees cover the cost of the equipment and the cost of operating the laundry. There has been no more loss of equipment. The department is operated with 100 per cent. efficiency. Every boy in class is dressed for physical education every day, unless he has a medical excuse.

There has been a 75 per cent. drop in cases of athlete's foot. In football last fall there was a 30 per cent. decrease in medical bills due to the decrease in the number of cases of this infection. We had, in fact, only one case.

This system worked so successfully that the girls asked for a similar plan. The cost of their suits was more than that of the boys' suits, so the fee was more—$1.25 a semester for two gymnasium periods a week. The suits were made of a heavy cotton fabric at a cost of $21 a dozen. They were designed by the school laundress, who is the mother of two children, and who had found the old suits most unsatisfactory.

The unique feature about this suit is its adaptability. The suits have no buttons and only one string loop. The adjustable belt line and the length of the blouse make the suit adjustable to all sizes. The suit looks well without ironing.

In addition to the suits, "gym" shoes were added this year and included in the physical education fee. Each pupil had his own shoes and at the end of they year they are given to him. Fortunately we have a tennis shoe factory in a nearby city. The salesman came over and fitted the boys and girls properly.

This plan has worked so well that a second high school in our city has installed the service this year. Visitors from nearby cities have come to observe the operation and the service. Our state board of health is interested in making a movie of the program in operation.

** Activities of committees described in "The Nurse in the Modern School", Lulu V. Cline, Public Health Nursing, September, 1936.

EDITORIALS

Res Ipsa Loquitur

Medical terms are difficult enough to understand even when truly descriptive.

In the interests of our understanding one another, as well as for the purpose of letting the general public understand us, and thereby have a much needed better attitude toward us, why should we fog the image, and bemuse ourselves, by describing diseases by the use of names of men instead of by the use of descriptive pathological terms.

There is a long list of these terms that do not describe. To mention a few: Parkinson's disease for paralysis agitans; Hodgkins' disease, which might better be called lymphatic hyperplasia; Bang's disease, sometimes also called Traum's disease, neuritis of the vistibular branch of the eighth nerve, and to osteitis deformans (this is "confusion worse confounded" by the fact that Paget's disease is a term also used for the change in and about the nipple which is often a precancerous change); Weil's disease, when the term epidemic catarrhal jaundice is much clearer and also carries a warning; Werlkop's disease for purpura hemorrhagica; Meniere's disease, which is not a disease but a symptom complex due to disturbance of the labyrinth, the causes of which range from drug poisoning, through the exanthemata, to neuritis of the vistibular branch of the eighth nerve, and to tumors of the cerebello-pontine angle.

If one feels he *must* use men's names for diseases instead of descriptive terms why not be consistent? Since Dr. Oliver Wendell Holmes was the first in America to expound the true cause and means of prevention of puerperal septicemia, why not call that disease Holmes' disease, or why not honor the physician who first described the true cause of "inflammation of the bowels" as an inflammation of the appendix by calling appendictis Fitz's disease?

This unscientific habit under discussion, while not so bad, still approaches the mumbo-jumbo of the careless or ignorant doctor who informs (tells would be a better word) the patient's family that he is "threatened with" typhoid fever or diphtheria. Of course he is not "threatened"—he has the disease or he does not have it, depending on the presence or absence of the specific micro-organism that, in each case, causes the disease.

Surely, "the thing speaks for itself."

* * * * *

On pages 194, 201 of this issue are several items regarding the prevalence of smallpox. Smallpox in a modern civilized community is wholly unnecessary. The presence there of any number of cases is a direct reflection on that community, and is one of the factors considered by intelligent people when they rate a town, city, or state as a desirable or undesirable place in which to live, or to do business.

The repeated occurrence of smallpox cases in any locale is a direct adverse criticism on that community and practically always is due to one or more of the following factors: (a) poor health laws, particularly the lack of a successfully operable compulsory vaccination law; (b) poor administration on the part of health officers; (c) lack of intelligence in the law making body, *and* in the community itself.

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The morass of professional jargon in writing and in speech-making is ever lying in the pathway of the unwary public health worker, according to *Channels*, monthly publication of the Social Work Publicity Council. In its April issue the magazine reprints the following as an example of pitfalls into which the short-sighted may stumble:

A hurried review of the season's morbidity reports should be termed "an intensive epidemiologic study."

Any health project that is undertaken in three or more communities becomes known as "a nation-wide campaign"; or, a-la-Kipling, "far flung."

If some prominent people are met in the day's work, be sure to report that "the key people were contacted" thus killing two birds with one stone, and killing also a hale and hearty noun.

A brief publicity project may be cursed effectively by having it designated a "drive," or better, an "intensive educational campaign."

If a committee is asked to meet, do not fail to extol the virtues of "group thinking"; it makes for clarity when a verb is tortured to create a doubtful noun.

When the help of others is needed it must be emphasized that nothing short of "100% co-operation" will do. Another convincing expression is "about 75%." The symbol of an exact determination qualified by an approximation becomes pleasantly obscure.

No scientific paper is complete without some reference to the "average man" of "normal health," however meaningless the expressions may prove.

Scientific jargon impresses the lay reader even if he does not understand it, so use "optional nutritional status," "case fatality rates," or "upper respiratory" whenever simpler terms would do.

From Bull. National Tuberculosis Assn., July, 1939.

ABSTRACTS

The Forgotten Child,—We have had much talk during the depression about the "forgotten man". But he was a difficult fellow to identify at times because he seemed to be anyone and everyone. Not so with the "forgotten child". You can locate him in any classroom in any school. He is the child whom you and I for lack of better definitive terms call normal. And he is the "forgotten" child.

In a practical situation where the school nurse carries a heavy caseload, she devotes a major part of her attention to the 25 percent of children who have some serious health problem. These certainly have first call on her time. However, what the school nurse gives, to a few is needed by all children as part of their natural growing-up. Primarily, the job of any school nurse today is that of health, education in such a manner that the child, the parent, and the teacher will want to put their knowledge into practice.

In the field of parent education, whether in school or at home, in groups or individually, there are several criteria by which the success of our health education efforts may be measured:

1. The parent recalls the experience as having been both pleasant and helpful.
2. The parent believes that the nurse is cognizant of and interested in all of the problems which the family is trying to solve.
3. The parent is convinced that the nurse believes the family is able to assume responsibility for making intelligent choices in solving its problems.
4. The parent is confident that the nurse in her discussion of a child's physical defects is fully aware of the assets the child has.
5. The parent feels that he has received some professional advice regarding safe sources of medical care.
6. The parent recognizes that he has been presented with a sufficient background of facts, from a professional source, to serve as a basis for his future actions.

Work through the teachers enables the nurse to maintain a constant watchfulness over all the children. In reality, the nurse delegates some of her functions to the teacher. These may include among others (1) making observations of every child in the class, (2) carrying out a systematic dental program, (3) using growth charts as an incentive to child interest, (4) studying child behavior in terms of seeking causes for such behavior. Not only must the teacher be shown how to carry such functions but also how to interpret them.

What the nurse gives directly to the "normal" child depends much on the nature of her contacts with that child. The pupil learns confidence in nursing service as symbolized by the nurses he knows.

He learns where to go or where not to go for help when in trouble. He learns either appreciations or prejudices that will go with him through life.

By way of summary, when the school nurse in actual practice uses her techniques to educate parents, teachers, and children to form sound attitudes toward health facts and health personnel, she reaches all children.

It is our present stress on physical defects that keeps many of us from seeing the larger objectives. Just as the educator for so long a period lost sight of his reason for teaching the multiplication tables and rules of grammar, so we have mistakenly assumed that a means toward an end was an end in itself. Children are dynamic creatures, changing while we look at them—becoming the adults of tomorrow's society. Our contacts with them in public health work must give evidence that we recognize our responsibility and our ability to serve them. Dorothy B. Nyswander, Ph.D., Public Health Nursing, March, 1939. Abstracted by E. E. Kleinschmidt, M.D.

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Health in the Consolidated School,—Morning comes. Lunch boxes rattle. Children congregate at byroads. The familiar bus appears, and millions of American children are off to school. The little one-room school is fast becoming a thing of the past. In Pennsylvania alone, 1,500 one-room schools are being discarded this term, and the pupils redistributed in large rural consolidated schools.

The new order brings to rural communities new problems in child health. The school bus itself becomes a medium for the spread of communicable diseases. It constitutes a health hazard because of long waits for the bus in cold and stormy weather. And it is a safety problem because of possible accident on highways and in the crowded school yards.

From the point of view of the school nurse, the plan of work depends on many factors: whether the service is under the control of the department of education or the department of health; whether it is financed from public funds or through a private agency, such as a Health Foundation, a Tuberculosis Association, or an American Red Cross chapter; whether the service is a specialized school health service or part of a generalized nursing program.

Nurse's Work Educational,—The work of the school nurse is primarily educational. This does not mean formal classroom instruction, which is usually better handled by the classroom teacher. The nurse should have the ability to make each health situation a positive force in the life of the child. She should be able to make the parents realize that the child's health—nutrition, correction of defects, immunization, and early recognition and

proper care of communicable disease—is their responsibility both for his own good and for the common welfare. She should be able to build satisfactory working relations between the family, the school, the physicians, the health department, and the social agencies of the community.

Careful Planning Necessary,—The matter of conserving time and physical strength is very important for the nurse working alone in a rural area. This can be done by a carefully planned program, concentrating on activities that require the nurse's professional skill. Many functions now performed by nurses would have greater educational value if carried out by teachers, parents, or children. A first-aid kit in every schoolroom teaches children to care for minor injuries. Weighing and measuring of pupils can be done by the teacher, and made a part of the regular health instruction. The teacher refers to the nurse only children needing special attention.

The nurse should have definite office hours for consultation. If the service includes home visits, much time can be saved by a carefully arranged plan with consideration of the geographical location of families and the content of the individual visit. In the home visit the nurse can also make a contribution to the health of the preschool child, advising the family regarding the importance of continuous medical supervision and the correction of physical handicaps before the child enters school.

Social Problems,—What is to be done for the child with no luncheon or insufficient food? A hungry child in school probably means hungry children at home. Relief measures, though sorely needed for health protection, are best administered by agencies other than the school, and such cases should be handled by a trained social worker. The nurse may help by interpreting home conditions to the social worker. Sometimes the nurse is able to make arrangements for the child to do some work at school for his luncheon.

Most rural areas show a wide diversity in the social and economic status of groups represented, and they usually lack a definite social setup for handling some types of relief.

A careful survey and tactful approach may link certain types of work with local agencies—even those which are some distances away. Lions' Clubs provide glasses and give service to prevent blindness. Many Rotary Clubs finance care of orthopedic cases. Needlework guilds supply clothing. And, in almost every community where there is no other social agency, the Red Cross stands ready to serve.

The Overfatigued Child,—The exceptionally long school day brings the problem of overfatigue. The child arriving on the school bus leaves home very early, sometimes with several hours of farm chores done. He may walk a mile or more to the bus. There

he may stand around in the rain—or if more fortunate in an open shed—waiting for a sometimes delayed school bus. Usually the more severe the weather the greater is the chance of delay. He often carries a cold luncheon. He is very late getting home from school, and then has more farm chores to do. The problem of overfatigue is found especially in the very young child, in those convalescing from illness, and occasionally in an adolescent boy or girl.

The Child Taken Ill at School,—If the child is taken ill in school, especially if a communicable disease is suspected, every effort should be made to transport him home by other means than the crowded school bus. Arrangements may be made to have the bus drivers take sick or injured children home. Drivers transporting children should be instructed to make sure there is someone at home to care for the child, if not, he should return the child to school until the parent or guardian has been located. Occasionally the transportation of a sick or injured child gives the nurse an opportunity for a home visit and a chance to emphasize the need for immunization, corrections of physical defects, or of home environment.

Standing Orders,—The best solution lies in securing written orders as to what the nurse can and cannot do, either from the county medical society or the school physician, and seeing that they are rigidly observed. Such orders should cover first-aid treatment of injuries and illness and redressings; treatments of skin diseases such as impetigo or scabies if they are to be the nurse's responsibility either to give or to teach parents; and the taking of cultures.

Education in Prevention,—Most important is the participation of parents and children in preventing illness and accidents, in recognizing deviations from normal health when they appear, and in assuming responsibility for care.

Teaching families prevention through the use of immunizing treatments is difficult in a rural section. How this should be done depends on the attitude of the local medical society, on whether children can be immunized through regular clinics, preschool conferences, or special clinics. If the family physician is to assume the responsibility, arrangements can sometimes be made so that groups of his patients can be sent to his office on a certain day.

Health Committees, — Health committees of parents and teachers seem to be the best way to meet the needs in a rural area which lacks the usual agencies found in towns and cities. The school is the center of community life, and organized groups can make a splendid contribution. In one school, a mothers' club organized eight years ago, having at times an attendance of only four or five mothers, has grown into a progressive, active study group with excellent programs. They raised the money necessary

to purchase stools and tables for the lunchroom, making it possible for all younger children to eat there. They have published a community cook book, and their present project is fitting up a loan closet for the use of the sick.

As the work develops, there must be a constant revision of objectives, policies, and methods. But only so far as the rural health service contributes to the general educational program of the school and the community can a successful program be developed. Adeline Thomas, R.N. Public Health Nursing, May, 1939, page 281. Abstracted by E. E. Kleinschmidt.

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NOTES

No Substitute For Nursing,—Dr. Oliver Wendell Holmes in a lecture to his students, November 6, 1867, said, "A pair of substantial mammary glands has the advantage over the two hemispheres of the most learned professor's brain in the art of compounding a nutritious fluid for infants."

In spite of all our pediatric progress, no perfect substitute has yet been found for mother's milk. There is some element that enters into its composition, the exact nature of which may never be known. The personal convenience of the socially ambitious mother is frequently an obstacle to an ideal diet schedule. When the mother does not have a sufficient quantity of this "nutritious fluid," we must always encourage supplementary and discourage substitutional feeding so far as possible. A.E.H. Editorial. The Journal Lancet, May, 1939, p. 243.

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Gas Explosion,—Again there has occurred a catastrophe to school children brought about by the exploding of gas within a building used for school purposes. While the odor of escaping gas is not extremely conspicuous, still it is noticeable. To this writer it seems inexcusable that any building used for school purposes should not be thoroughly enough inspected and supervised so that such a catastrophe would be impossible.

While in most States the law will hold the school district financially liable in such a situation, these occurrences come often enough to make one feel that there should be a change in the law that would make members of boards of education and their employees personally liable, financially and criminally.

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A Health Service,—The Los Angeles Board of Education employs 50 school physicians, 33 of them full time, and 92 full time school nurses. Dr. Sven Lokrantz, who organized and built up this service, and Dr. Morley Sellery, at present acting as Director of the Health Service Section are Fellows of the American School Health Association.

ANNUAL MEETING, THE AMERICAN SCHOOL HEALTH ASSOCIATION — PITTSBURGH, PA.*

The Program of our Annual Meeting is fundamentally a cooperative program. Joint sessions and joining with other groups will bring a feast of interest for the school health worker. A summary follows. The complete program will be published in the October JOURNAL.

MONDAY afternoon we shall consider three important aspects of planning the school health program—i.e., MELLIE F. PALMER, formerly in Des Moines and now Asst. Professor at the University of Minnesota, will discuss administrative organization for efficient functioning of the school nurse; J. LOUIS NEFF, Secretary, Nassau County Medical Society, as a Medical Society Executive, will discuss how organized medicine can be brought into the picture to meet the problem of adequate medical facilities; and DR. HORTON CASPARIS, Prof. of Pediatrics, Vanderbilt University, School of Medicine, Nashville, Tenn., will discuss what we might do for mental health. The evening speakers have been selected from the school physician group to lead discussion on some fundamentals of school health administration. DR. B. B. BAGBY, Virginia, will consider the job of the State Department. DR. FREDRIKA MOORE, Consultant, Division of Child Hygiene, Mass., will discuss what we should attempt with a limited budget; DR. HELEN A. CAREY, Director of School Health Service, Portland, Ore., will present the school physician's part in follow up; and DR. J. F. ROGERS, Consultant in Hygiene, of Washington, will raise that very troublesome question of the frequency of routine examinations.

TUESDAY morning, all school health workers are invited to hear "The High Points of the Institute" on Public Health Education. In the afternoon, we join with the Food and Nutrition Section and the Child Hygiene Section on School Nutrition Problems. It is encouraging to note that the appraisal of nutritional status by new medical methods is the subject of research by two departments of Cornell Medical College with assistance from the U. S. Public Health Service and the Milbank Foundation. This will be reported by WILLIAM SCHMIDT, M.D., who is directing the study. Another significant development in school health is the administrative research under the guidance of the School Health Study Committee. The American School Health Association representative on this Committee is our past-president, DR. CHARLES C. WILSON, and several members are identified with the staff. GEORGE M. WHEATLEY, M.D., Assoc. Director School Health Study, New York City, will report on the procedures developed for the selection and

* The public schools of Pittsburgh have one of the best organized and most efficient Departments of Hygiene existing in any public schools in America. Arrangements are being made for members of the Association to visit schools to study the workings of this program.

follow up of malnutrition, and on staff training as it has grown out of the new procedures. "What Should Be Taught in High Schools Regarding Nutrition and How Can It Be Made Functional" is another report of a Study Committee—i.e., The North Central Association of Colleges and Secondary Schools. PROFESSOR LYNDA M. WEBER will discuss this question from the experience of the Progressive Education Experiment, and DR. C. C. HUDSON will report on the school lunch and health service. Dr. Hudson is Health Officer of Greensboro, N. C. where he has developed an unusually effective school lunch service on a co-operative basis.

WEDNESDAY, October 18, is a full day devoted to dental health problems. The morning Joint Session has been particularly planned for the interest of the school health administrator.

THURSDAY morning we join with two sections of A.P.H.A. to hear reports of recent research on the physical and emotional development of the adolescent and the interpretation of this to practical school health programs; at noon is our Tuberculosis Committee Luncheon, with a promise of two new and interesting reports. In the afternoon our Association starts action on the Report on School Health Policies referred to us by the Child Hygiene Section of the A.P.H.A. Several Committees have been appointed to study and criticize this Report. The commendation of this Report from widespread sources seems to give promise of achieving a common basis of understanding of policies. Following reports of the special committees, the meeting will be open to general discussion from anyone in the meeting who has studied the report. A limited number of copies are available from the Chairman, Dr. Charles C. Wilson, Board of Education, Hartford, Connecticut, for the cost of mailing (15c).

FRIDAY morning the Child Hygiene Section considers Mental Health, the development of health education programs, and the care of crippled children. In the afternoon we join with the Public Health Education Section on a joint program on "The Educational Psychology Underlying the Motivation of the Individual."

This program is rich with interest to the school health worker, and this meeting will be of unusual value to the student of school health procedure, policy, and philosophy. Many of the general sessions of A.P.H.A. will touch on problems that every school health worker should study. Also, many other subjects presented by various Sections will undoubtedly interest the alert school health worker. A few of them are—Newer Knowledge of Bacillary Dysentery; personnel problems and Civil Service; farm and home accidents; advertising control of foods, drugs, cosmestics; medical care plans for low-income families; fatality rates of reported cases of tuberculosis, and other new tuberculosis studies; control of dental caries; and survey of nutrition service in the U. S. and other nutrition reports.

REVIEW

"Tests and Measurements in Health and Physical Education." —*Charles Harold McCloy.* F. S. Crofts & Co., New York, 1939. Pp. 392. Price $3.00.

How far up the scale of physical and intelligence development man progressed before he exhibited curiosity regarding his body, there is now no means of knowing. The baby, from youngest infancy, manifests such curiosity. What am I? What are these parts for? How do they function? How efficient am I? are among the earliest questions found in the human mind.

Numerous schemes have been devised for measuring the body, its effectiveness, and what it may safely attempt. The earliest of these, is that field of science known as Anthropometry. Except for a short chapter devoted to measurement of size and maturity, the author purposely does not discuss anthropometric tests at length. With this exception, the field of physical tests is well covered. The author, in his foreword, makes it clear that he has omitted some of the older tests which he feels have been supplanted by more recent and better ones.

The text discusses the need of tests, the requirements of good tests, and the means of administering them, and devotes chapters to the different types of tests, such as those of strength, power, motor educability, agility, track and field, motor ability, endurance, and special ability tests. Attention is given to the use of tests in classification of pupils, to achievement tests, rating scales, health tests, medical examinations, cardiovascular tests, and to body mechanics.

The reviewer takes vigorous exception to the statement on page 27 regarding the Physical Fitness Index. "Where a low P. F. I. is found, the individual should be carefully examined by a competent physician before being assigned to strenuous physical activities." This exposes a dangerous fallacy in the author's point of view, since the P. F. I. is itself a strenuous physical activity, especially when used on adolescents. It should be given only *after* a careful physical examination given by a competent physician.

With this reservation in mind, it is recommended that this text be made a part of the professional library of those engaged in or peculiarly interested in school health activities or programs.

Charles H. Keene, M.D.

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MEETINGS

Annual Conference of the National Society for the Prevention of Blindness, Hotel Astor, New York, October 26-28, 1939.

The American School Health Association and the American Public Health Association, October 16-20, Pittsburgh, Penna. The headquarters of the American School Health Association will be at the Hotel Roosevelt. Members should make early reservations of rooms at this hotel.